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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Project	Date	Author

TITLE

REPORT OF PINE BEETLE SURVEYS
ON THE
YAKIMA INDIAN RESERVATION, WASHINGTON
SEASON OF 1942

By

J. M. Whiteside
Assistant Entomologist
Bureau of Entomology and Plant Quarantine

April 1943

Forest Insect Laboratory
445 U. S. Court House
Portland, Oregon

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SUBJECT—

INDEX NO.

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SEASON OF 1942

Approved by:

F. P. Keen
Senior Entomologist

Submitted by:

J. M. Whiteside
Assistant Entomologist

Forest Insect Laboratory
445 U. S. Court House
Portland, Oregon
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ABSTRACT

A. The 1941 Infestation (Complete Record)

1. Primary insect - Western pine beetle in ponderosa pine
2. Estimated total pine timber killed in 1941:

No. Trees	Volume (BM)	Volume Per Acre	Percent of Stand
30,000	23,000,000	60	0.8

3. Classification of infestation - Normal endemic to light epidemic over most of the Reservation but severe epidemic infestation on Logy Creek, Satus Creek, and Smith Springs Areas.
4. Trend of infestation - Slowly but steadily upward since the low of 1936.

B. The 1942 Infestation (Partial Record)

1. Primary insect - Western pine beetle in ponderosa pine.
2. Probable trend - Approximately the same as 1941 or a probable slight decline over most of the Reservation.
3. Recommendations- Direct control unnecessary but selective logging highly desirable in heaviest centers of infestation.

REPORT OF PINE BEETLE SURVEYS ON THE YAKIMA INDIAN RESERVATION, WASHINGTON SEASON OF 1942

Prior to 1941, reports of pine beetle surveys on the Yakima Indian Reservation were prepared by Mr. Harold Weaver, now Forest Supervisor on the Colville Indian Reservation, Washington. The results of the 1941 survey on this Reservation were reported by Mr. N. F. Caywood of the Spokane Office of Indian Affairs. A summary of the surveys during the season of 1942 is herewith submitted in order that no gap shall exist in the series of survey loss reports for the Yakima.

The 1942 survey was made during the period from October 26 to 31, 1942 by Messrs. Chester and Johnson of the Indian Service and Mr. Hess and the writer of the Bureau of Entomology and Plant Quarantine. The numbers and size of the check plots cruised in 1942 was reduced, because of a shortage of funds and manpower, from eight 640-acre plots to six 320-acre plots. As usual, a one hundred percent cruise of insect-killed ponderosa pine was made on these plots and, in addition, a ten percent cruise of the green pine stand was made by the random quarter-acre circular plot method. The results of this latter cruise are incongruous with a previous cruise on these plots and are therefore omitted from this report.

RESULTS OF THE SURVEY

Losses in 1941

The 1942 survey completed the loss records for 1941 and secured preliminary data for 1942. Gross 1941 western pine beetle check plot losses averaged 94 board feet per acre (Table 1) and were slightly higher than those of the previous year. Severe epidemic conditions were found on two of the six plots (#14 and #15) and normal endemic or light epidemic infestations were recorded on the remaining plots.

A total of 23 million board feet were estimated to have been killed by pine beetles over the Reservation as a whole in 1941 (Table 2).

Indicated 1942 Losses

Approximately 80 percent of the probable 1942 losses were marked during 1942. On the basis of these partially completed surveys, the check plot losses are estimated to be only 1 percent lower than those of 1941 (Table 1). Continued heavy losses were found on the Logy Creek and Smith Springs plots but reduced losses were recorded on the other plots.

Infestation Trend

The trend of estimated pine beetle losses on the Yakima Indian Reservation since 1931 is shown in Figure 1. From the extremely high peak reached in 1933, pine beetle losses declined to a very low point in 1936. Since 1936 the trend of these losses has been definitely upward and they have increased slowly but steadily each year. It is fortunate that the western pine beetle has not been as aggressive as in 1932 and 1933, otherwise the recent insect-caused mortality on the Yakima would have been considerably higher.

RECOMMENDATIONS

No direct control work is necessary at this time on the Yakima Indian Reservation. However, it would be highly desirable to consider immediately the institution of selective-logging operations in those portions of the Reservation which continue to show high losses; namely, the Satus Creek, the Logy Creek and the Smith Springs Units. The Bureau of Entomology and Plant Quarantine of the Department of Agriculture, through its field offices in Portland, Oregon and Berkeley, California offers its cooperation in determining the areas and the types of trees most susceptible to insect attack.

Table 1. Ponderosa pine timber killed by bark beetles on virgin check plots on the Yakima Indian Reservation—Results of the 1942 survey.

Check Plots					1941 Losses			1942 Losses						
		Location				Volume (Bd.Ft.)		Partial losses			Estimated total Losses			
Area	No.	Twp.	Rge.	¼ Sec.	No.	Gross Volume	Per Acre	Date of Cruise	No. Trees	Volume (Bd.Ft.)	No. Trees	Volume (Bd.Ft.) Gross Volume	Per Acre	Ratio to 1941
Trout Creek	4	7N	13E	17E	19	11,530	36	10/30/42	8	1,740	14	8,000	25	.70
South Cedar Valley	6	6N	14E	9W	24	19,340	60	10/29/42	17	9,080	21	11,000	34	.57
Castile Crossing	12	9N	12E	13W	33	31,480	100	10/26/42	17	21,840	22	27,000	84	.86
Logy Creek	14	7N	16E	10W	87	62,470	195	10/28/42	66	50,760	83	64,000	200	1.03
Smith Spring	15	8N	15E	2E	68	50,330	157	10/29/42	42	53,080	52	66,000	206	1.31
Olney Corral	16	10N	14E	27W	10	5,040	15	10/27/42	6	1,360	8	2,000	6	.40
RESERVATION TOTAL					241	180,190	94		156	137,500	200	178,000	93	.99

Table 2. Estimated gross 1941 ponderosa pine mortality—Yakima Indian Reservation

Year	Ponderosa Pine Type		Estimated 1941 Mortality				
			Trees		Volume (BM)		
	Acreage	Volume BM	Total	Per Section	Total	Per Acre	Percent of Stand
1941	360,000	2,900,000,000	30,000	54	23,000,000	60	0.8

FIGURE 1

TREND OF GROSS WESTERN PINE BEETLE LOSSES
YAKIMA INDIAN RESERVATION
1931-1941